<u>Please add the following new Claims 2-49 as follows:</u>

2.   A computer-implemented method of representing a mathematical transform between a binary output variable and a plurality of binary input variables on a computer display, the method comprising the steps of:

separating the plurality of binary input variables into a respective plurality of fields, each field of the plurality of fields corresponding to a respective display level of a multi-level display format having a top display level and at least one lower display level;

selecting a combination of the binary input variables of a first field of the plurality of fields, the first field corresponding to a first display level;

identifying combinations of the binary input variables of a second field of the plurality of fields which affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields, the second field corresponding to a second display level lower than the first display level;

displaying, on the computer display at the second display level, the identified combinations of the binary input variables of the second field of the plurality of fields in at least one collapsed combination map.

3.   The method of Claim 2, wherein the at least one collapsed combination map includes no combinations of the binary input variables of the second field of the plurality of fields which do not affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields.

4.   The method of Claim 2, wherein the step of displaying includes displaying the binary input variables of the identified combinations in a sequential order.

5.   The method of Claim 2, wherein prior to the step of displaying, the method further comprises a step of defining a sequential order for the display of the binary input variables of the identified combinations.

6.   The method of Claim 5, wherein the step of defining includes a step of generating an array identifying the binary input variables of the identified combinations.

7.   The method of Claim 6, wherein the step of defining further includes a step of arranging the identified binary input variables of the array in the sequential order for display.

8.   The method of Claim 6, wherein the identified combinations are first identified combinations, wherein the step of identifying further includes identifying second identified combinations of the binary input variables of the second field of the plurality of fields which do not affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields, and wherein prior to the step of generating, the step of defining further includes a step of marking the binary input variables of the first identified combinations as active and the binary input variables of the second identified combinations as inactive.

9.   The method of Claim 8, wherein the step of generating an array includes generating an array identifying the binary input variables of the second identified combinations.

10.   The method of Claim 2, wherein the identified combinations comprise first identified combinations, wherein the step of identifying further includes identifying second identified combinations of the binary input variables of the second field of the plurality of fields which do not affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields, and wherein the method further comprises a step of displaying, on the computer display at the second display level, the second identified combinations of the binary input variables of the second field of the plurality of fields in at least one collapsed combination map.

11.   The method of Claim 2, wherein the method further comprises a step of displaying, on the computer display at the first display level, the selected combination of the binary input variables of the first field.

12. The method of Claim 11, wherein the method further comprises a step of displaying an indication of a relationship between the selected combination of the binary input variables of the first field of the plurality of fields and a combination of the binary input variables of a second field of the plurality of fields.

13. The method of Claim 2, wherein the at least one collapsed combination map includes a Karnaugh map.

14. The method of Claim 2, wherein the at least one collapsed combination map includes a truth table.

15. A computer-implemented method of representing a mathematical transform between a binary output variable and a plurality of binary input variables on a computer display, the method comprising the steps of:

separating the plurality of binary input variables into a respective plurality of fields, each field of the plurality of fields corresponding to a respective display level of a multi-level display format having a top display level and at least one lower display level;

selecting a combination of the binary input variables of a first field of the plurality of fields, the first field corresponding to a first display level;

identifying combinations of the binary input variables of a second field of the plurality of fields which do not affect the value of the binary output variable for the selected combination of the binary input variables of the first field, the second field corresponding to a second display level lower than the first display level;

displaying, on the computer display at the second display level, the identified combinations of the binary input variables of the second field in at least one collapsed combination map.

16. The method of Claim 15, wherein the identified combinations of the binary input variables of the second field comprise first identified combinations, and wherein the method

further comprises a step of identifying second identified combinations of the binary input variables of the second field of the plurality of fields which affect the value of the binary output variable for the selected combination of the binary input variables of the first field.

17. The method of Claim 16, wherein the method further comprises a step of displaying, on the computer display at the second display level, the binary input variables of the second identified combinations in at least one collapsed combination map.

18. The method of Claim 17, wherein the step of displaying the binary input variables of the second identified combinations includes displaying the binary input variables of the second identified combinations in sequential order.

19. The method of Claim 16, wherein the method further comprises a step of generating an array identifying the binary input variables of the second identified combinations.

20. The method of Claim 19, wherein the method further comprises a step of arranging the identified binary input variables of the array in a sequence defining the order in which the identified binary input variables of the array are to be displayed in at least one collapsed combination map at the second display level.

21. The method of Claim 20, wherein the method further comprises a step of displaying, on the computer display at the second display level, the identified binary input variables of the array in the arranged sequence in at least one collapsed combination map.

22. The method of Claim 19, wherein prior to the step of generating an array, the method further comprises a step of marking the binary input variables of the second identified combinations as active.

23.   The method of Claim 19, wherein prior to the step of generating an array, the method further comprises a step of marking the binary input variables of the first identified combinations as inactive.

24.   The method of Claim 17, wherein the binary input variables of the first identified combinations are not present in the at least one collapsed combination map displaying the binary input variables of the second identified combinations.

25.   The method of Claim 16, wherein the method further comprises a step of displaying, on the computer display at the second display level, the second identified combinations of the binary input variables of the second field in at least one non-collapsed combination map.

26.   The method of Claim 15, wherein the method further comprises a step of displaying, on the computer display at the first display level, the selected combination of the binary input variables of the first field.

27.   The method of Claim 26, wherein the method further comprises a step of displaying an indication of a relationship between the selected combination of the binary input variables of the first field of the plurality of fields and a combination of the binary input variables of a second field of the plurality of fields.

28.   A computer program having a plurality of instructions executable by a computer for implementing a method of representing a mathematical transform between a binary output variable and a plurality of binary input variables on a computer display, said computer program for directing the computer to perform the steps of:

          separating the plurality of binary input variables into a respective plurality of fields, each field of the plurality of fields corresponding to a respective display level of a multi-level display format having a top display level and at least one lower display level;

selecting a combination of the binary input variables of a first field of the plurality of fields, the first field corresponding to a first display level;

identifying combinations of the binary input variables of a second field of the plurality of fields which affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields, the second field corresponding to a second display level lower than the first display level;

displaying, on the computer display at the second display level, the identified combinations of the binary input variables of the second field of the plurality of fields in at least one collapsed combination map.

29.   The computer program of Claim 28, wherein the at least one collapsed combination map includes no combinations of the binary input variables of the second field of the plurality of fields which do not affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields.

30.   The computer program of Claim 28, wherein the step of displaying includes a step of displaying the binary input variables of the identified combinations in a sequential order.

31.   The computer program of Claim 28, wherein prior to the step of displaying, said computer program further directs the computer to perform a step of defining a sequential order for the display of the binary input variables of the identified combinations.

32.   The computer program of Claim 31, wherein the step of defining includes a step of generating an array identifying the binary input variables of the identified combinations.

33.   The computer program of Claim 32, wherein the step of defining further includes a step of arranging the identified binary input variables of the array in the sequential order for display.

34.   The computer program of Claim 32, wherein the identified combinations are first identified combinations, wherein the step of identifying further includes identifying second identified combinations of the binary input variables of the second field of the plurality of fields which do not affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields, and wherein prior to the step of generating, the step of defining further includes a step of marking the binary input variables of the first identified combinations as active and the binary input variables of the second identified combinations as inactive.

35.   The computer program of Claim 34, wherein the step of generating an array includes generating an array identifying the binary input variables of the second identified combinations.

36.   The computer program of Claim 28, wherein the identified combinations comprise first identified combinations, wherein the step of identifying further includes identifying second identified combinations of the binary input variables of the second field of the plurality of fields which do not affect the binary output variable for the selected combination of the binary input variables of the first field of the plurality of fields, and wherein said computer program further directs the computer to perform a step of displaying, on the computer display at the second display level, the second identified combinations of the binary input variables of the second field of the plurality of fields in at least one collapsed combination map.

37.   The computer program of Claim 28, wherein said computer program further directs the computer to perform a step of displaying, on the computer display at the first display level, the selected combination of the binary input variables of the first field.

38.   The computer program of Claim 37, wherein said computer program further directs the computer to perform a step of displaying an indication of a relationship between the selected combination of the binary input variables of the first field of the plurality of fields and a combination of the binary input variables of a second field of the plurality of fields.

39.   The computer program of Claim 28, wherein the at least one collapsed combination map includes a Karnaugh map.

40.   The computer program of Claim 28, wherein the at least one collapsed combination map includes a truth table.

41.   A computerized method of representing a mathematical transform between a binary output variable and a plurality of binary input variables on a computer display, the method comprising the steps of:

separating the plurality of binary input variables into an ordered plurality of successive fields;

generating a plurality of field combination maps for each respective successive field of the ordered plurality of successive fields, each field combination map having a plurality of cells;

forming a plurality of field cell chains representative of all binary combinations of the plurality of binary input variables by associating field combination maps of successive fields of the ordered plurality of successive fields; and,

displaying, in a collapsed form, the field combination maps of each field cell chain of the plurality of field cell chains which include binary input variables that do not affect the value of the binary output variable.

42.   The method of Claim 41, wherein each field cell chain of the plurality of field cell chains represents a unique combination of the plurality of binary input variables.

43.   The method of Claim 41, wherein the step of forming a plurality of field cell chains includes a step of assigning each cell of a field combination map of a successive field of the ordered plurality of successive fields to a unique field combination map of a subsequent successive field of the ordered plurality of successive fields.